

Part 4

General Mortality Statistics

Part 4

In 1996–98, the age-adjusted death rate (all causes) for the IHS service area population was 715.2 deaths per 100,000 population. The rate is adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 49 percent higher than the U.S. all-races rate of 479.1 for 1997. The Bemidji (1,067.5) and Aberdeen (1,009.4) rates are more than double the U.S. all-races rate.

Chart 4.1

Age-Adjusted Death Rates

Calendar Years 1996-1998

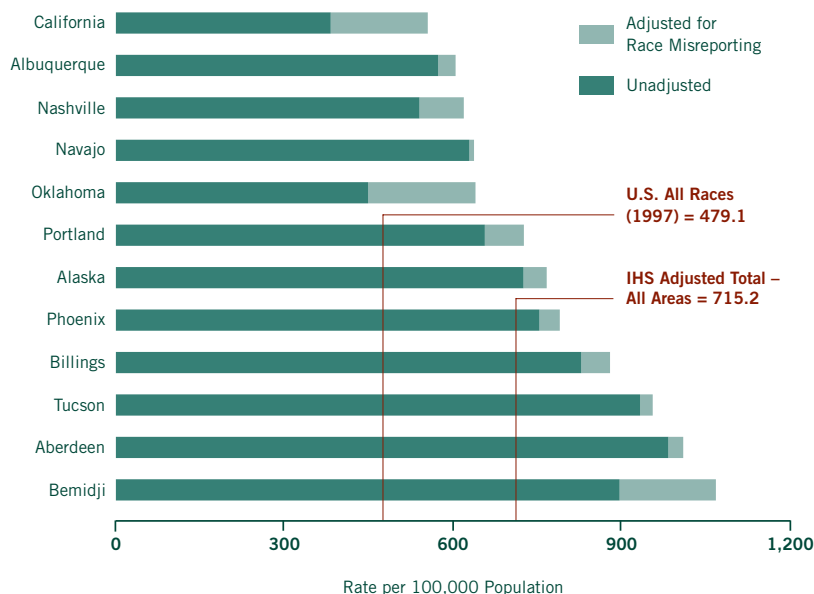


Table 4.1

Age-Adjusted Death Rates

Calendar Years 1996-1998

(All Causes)

	Deaths ¹		Rate ²	
	Unadjusted	Adjusted ³	Unadjusted	Adjusted ³
U.S. All Races (1997)	2,314,245		479.1	
All IHS Areas	23,508	26,964	620.7	715.2
Aberdeen	2,113	2,168	982.9	1,009.4
Alaska	1,790	1,888	725.2	766.5
Albuquerque	1,182	1,238	573.4	604.4
Bemidji	1,853	2,201	896.2	1,067.5
Billings	1,036	1,097	828.0	879.2
California	1,269	1,841	382.2	554.9
Nashville	1,095	1,258	540.1	619.0
Navajo	3,426	3,457	628.9	637.2
Oklahoma	4,372	6,066	448.6	639.8
Phoenix	2,399	2,508	753.5	789.8
Portland	2,333	2,589	656.4	725.9
Tucson	640	653	932.6	955.1

¹Includes deaths with age not reported (6 deaths IHS-wide; Aberdeen-1 death, Nashville-1 death, Oklahoma-1 death, and Tucson-3 deaths).

² Age-adjusted rate per 100,000 population.

³ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98, the years of potential life lost rate for the IHS service area population was 88.6 years per 1,000 persons under 65 years, which is 83 percent higher than the U.S. all-races rate of 48.4 for 1997. The IHS service area rate is adjusted for misreporting of AI/AN race on the death certificate. The rate of each IHS Area is higher than the U.S. all-races rate. The lowest Area rate, California (70.1 years of potential life lost per 1,000 persons under 65 years), is 45 percent greater than the U.S. all-races rate, while the highest Area rate, Aberdeen, (119.5) is 2.5 times the U.S. all-races rate.

Chart 4.2

Years of Potential Life Lost (YPLL) Rates

Calendar Years 1996-1998

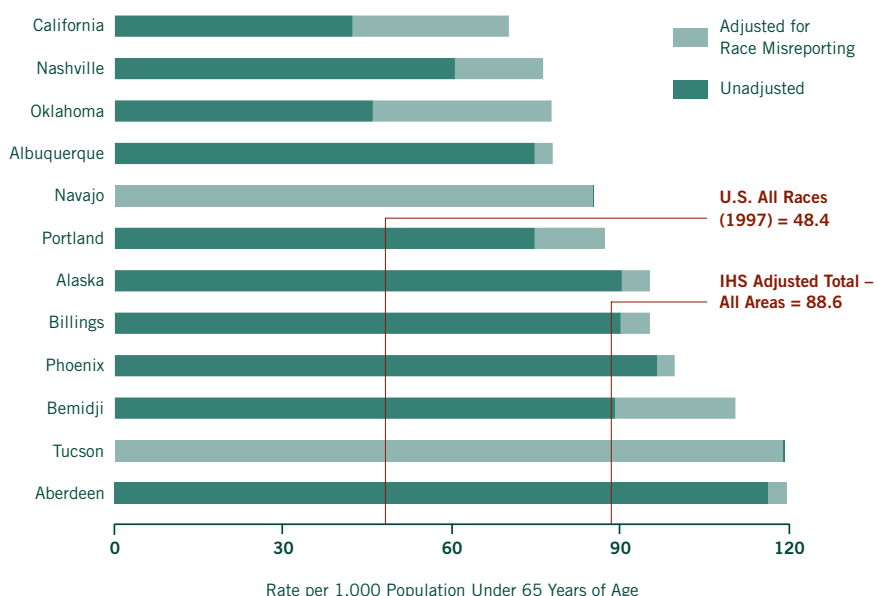


Table 4.2

Years of Potential Life Lost (YPLL) Rates

Calendar Years 1996-1998

(All Causes)

	Number of YPLL ¹		Rate ²	
	Unadjusted	Adjusted ³	Unadjusted	Adjusted ³
<i>U.S. All Races (1997)</i>	11,267,822		48.4	
<i>All IHS Areas</i>	304,450	358,557	75.3	88.6
Aberdeen	31,420	32,287	116.2	119.5
Alaska	26,292	27,752	90.2	95.2
Albuquerque	16,495	17,193	74.7	77.9
Bemidji	20,751	25,751	89.0	110.4
Billings	14,144	14,961	90.0	95.2
California	14,758	24,449	42.3	70.1
Nashville	12,411	15,631	60.5	76.2
Navajo	51,083	50,892	85.3	85.0
Oklahoma	37,655	63,697	45.9	77.7
Phoenix	38,619	39,873	96.5	99.6
Portland	31,520	36,813	74.7	87.2
Tucson	9,302	9,258	119.4	118.8

¹ Years of Potential Life Lost (YPLL) is a mortality indicator which measures the burden of premature deaths. It is calculated by subtracting the age at death from age 65 and summing the result over all deaths.

This calculation was performed through the use of age groups under one, one to four, and five-year age groups through sixty to 64 years. The age at death was calculated based upon the mid-point of each of these age groups.

² Rate per 1,000 population under 65 years of age.

³ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

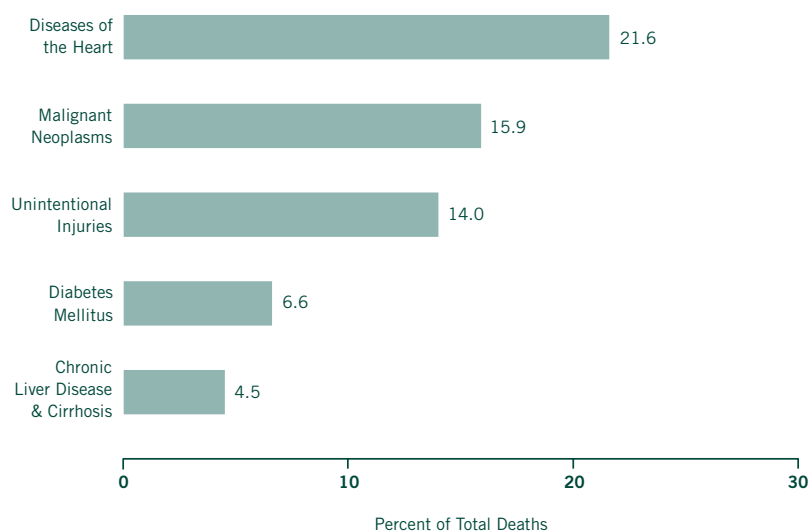
In 1996–98, 21.6 percent of all deaths in the IHS service area were caused by diseases of the heart, followed by malignant neoplasms (15.9 percent), unintentional injuries (14.0 percent), diabetes mellitus (6.6 percent), and chronic liver disease and cirrhosis (4.5 percent).

Chart 4.3

Leading Causes of Death

Calendar Years 1996–1998

All IHS Areas



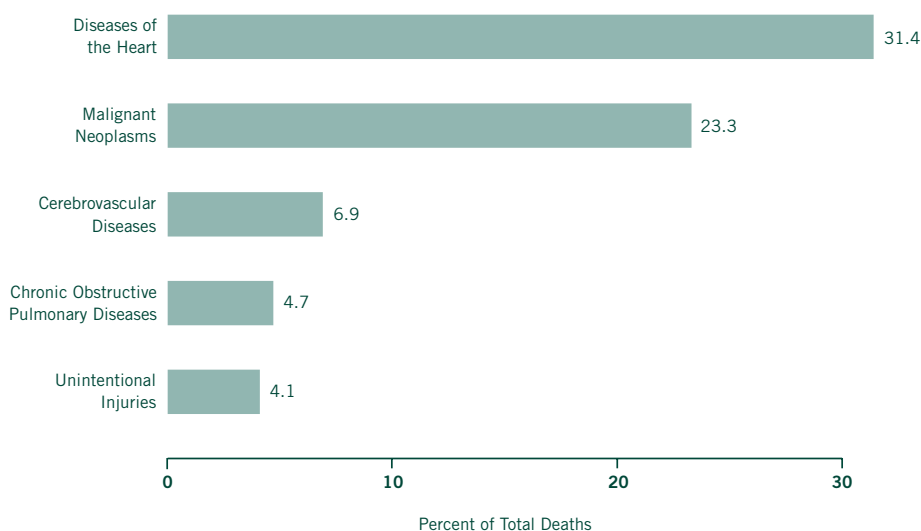
In 1997, 31.4 percent of all deaths in the U.S. were caused by diseases of the heart, followed by malignant neoplasms at 23.3 percent.

Chart 4.4

Leading Causes of Death

Calendar Year 1997

U.S. All Races

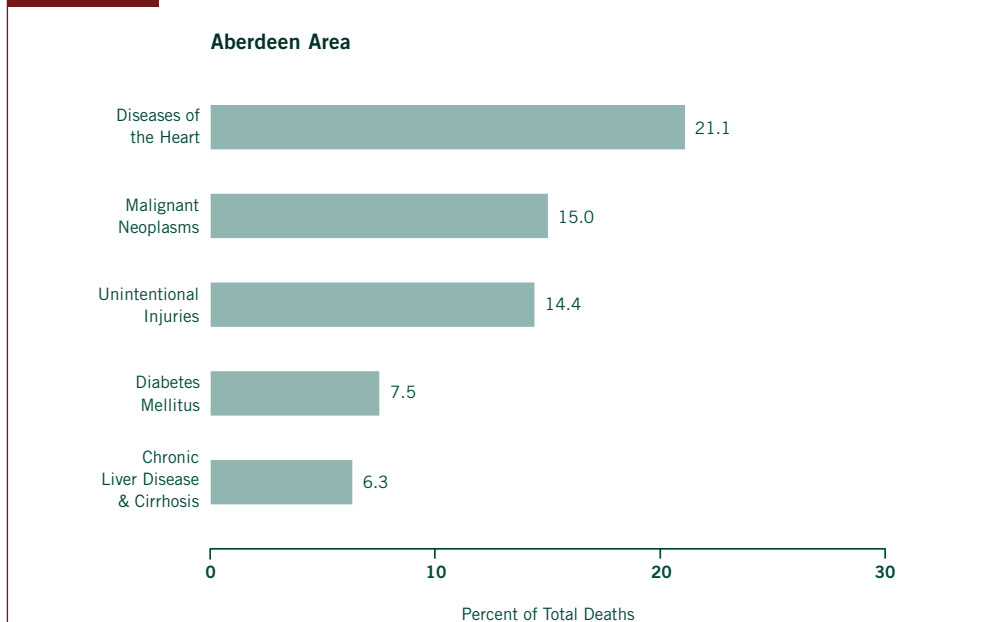


In 1996-98, 21.1 percent of all deaths in the Aberdeen Area were caused by diseases of the heart, followed by malignant neoplasms at 15.0 percent.

Chart 4.5

Leading Causes of Death

Calendar Years 1996-1998

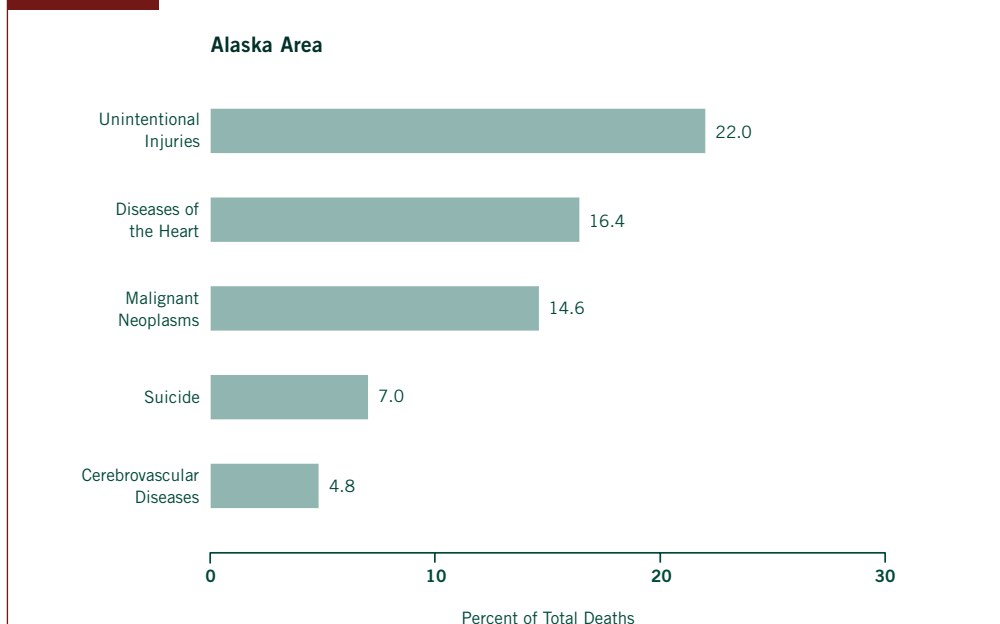


In 1996-98, 22.0 percent of all deaths in the Alaska Area were caused by unintentional injuries, followed by diseases of the heart at 16.4 percent.

Chart 4.6

Leading Causes of Death

Calendar Years 1996-1998



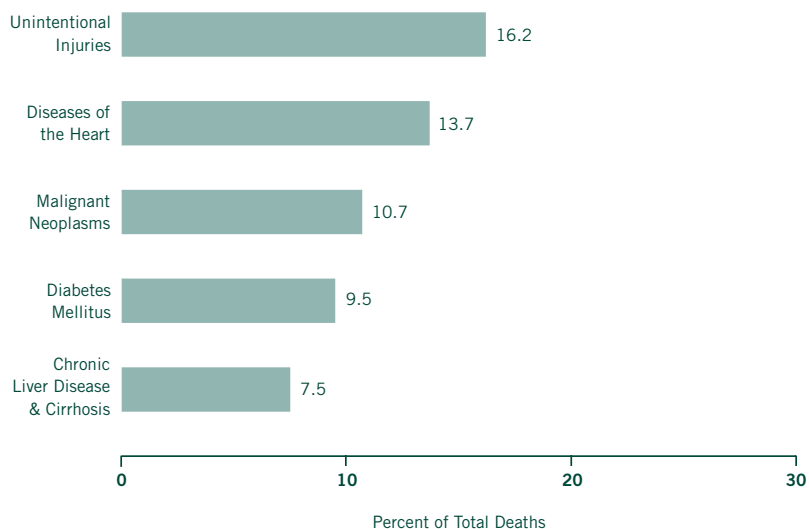
In 1996–98, 16.2 percent of all deaths in the Albuquerque Area were caused by unintentional injuries, followed by diseases of the heart at 13.7 percent.

Chart 4.7

Leading Causes of Death

Calendar Years 1996–1998

Albuquerque Area



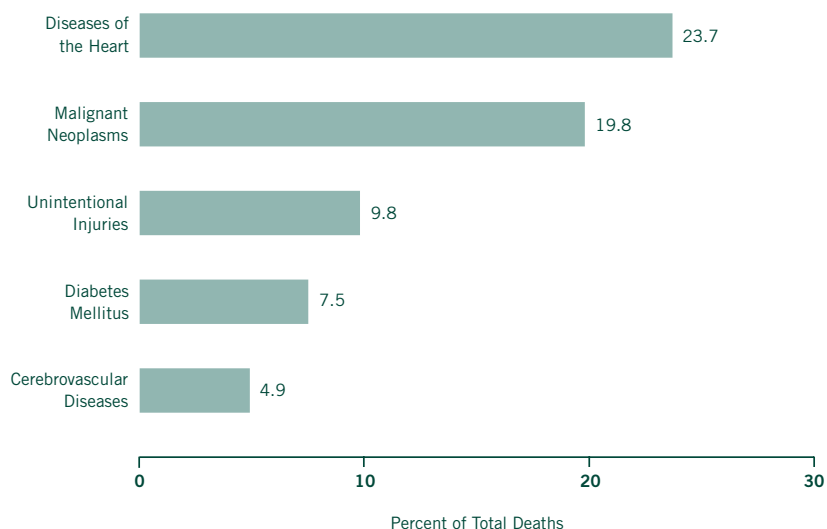
In 1996–98, 23.7 percent of all deaths in the Bemidji Area were caused by diseases of the heart, followed by malignant neoplasms at 19.8 percent.

Chart 4.8

Leading Causes of Death

Calendar Years 1996–1998

Bemidji Area

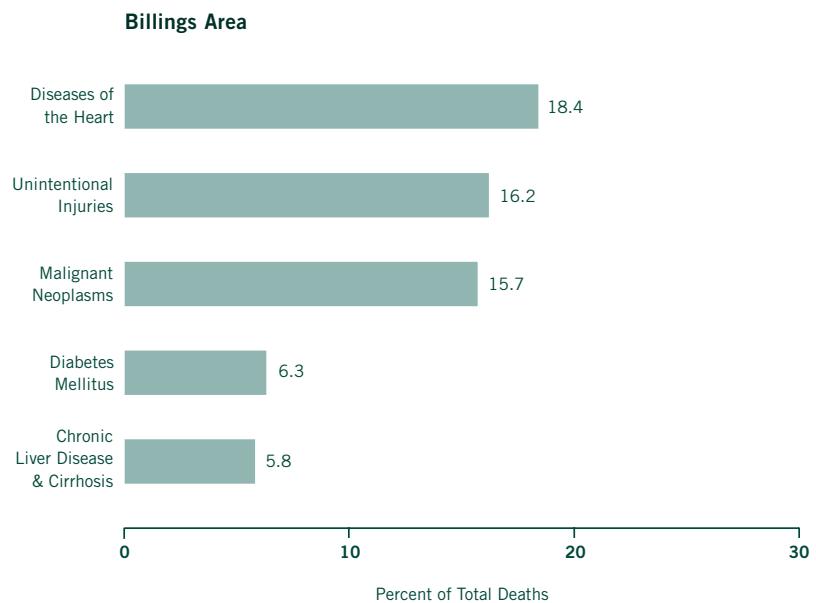


In 1996-98, 18.4 percent of all deaths in the Billings Area were caused by diseases of the heart, followed by unintentional injuries at 16.2 percent.

Chart 4.9

Leading Causes of Death

Calendar Years 1996-1998

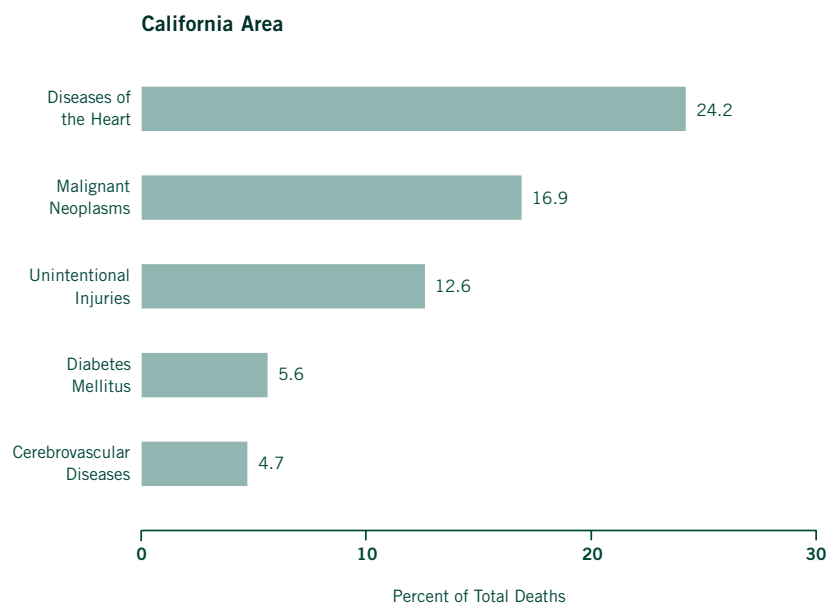


In 1996-98, 24.2 percent of all deaths in the California Area were caused by diseases of the heart, followed by malignant neoplasms at 16.9 percent.

Chart 4.10

Leading Causes of Death

Calendar Years 1996-1998

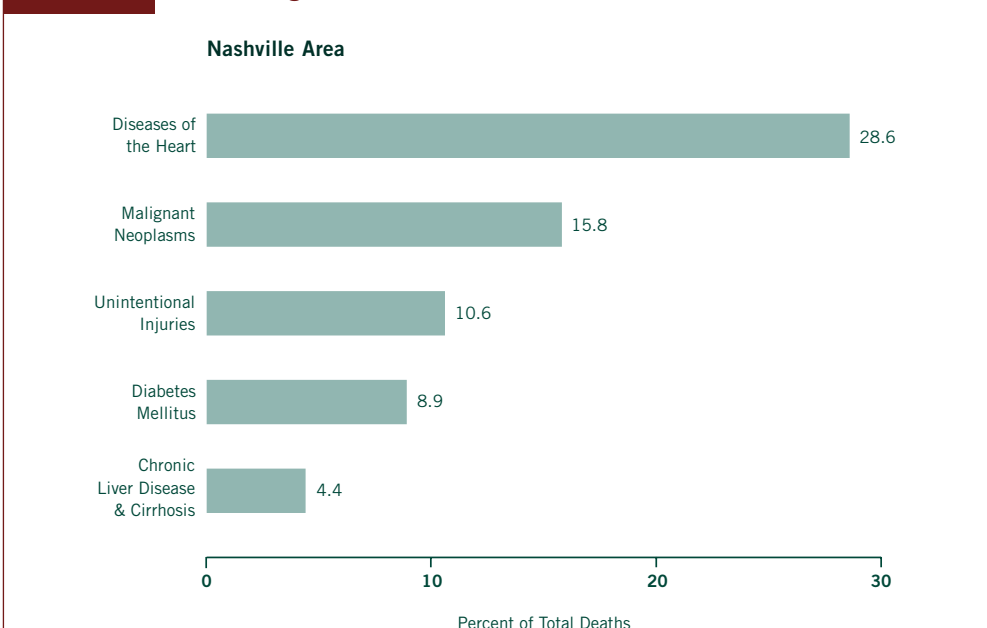


In 1996–98, 28.6 percent of all deaths in the Nashville Area were caused by diseases of the heart, followed by malignant neoplasms at 15.8 percent.

Chart 4.11

Leading Causes of Death

Calendar Years 1996-1998

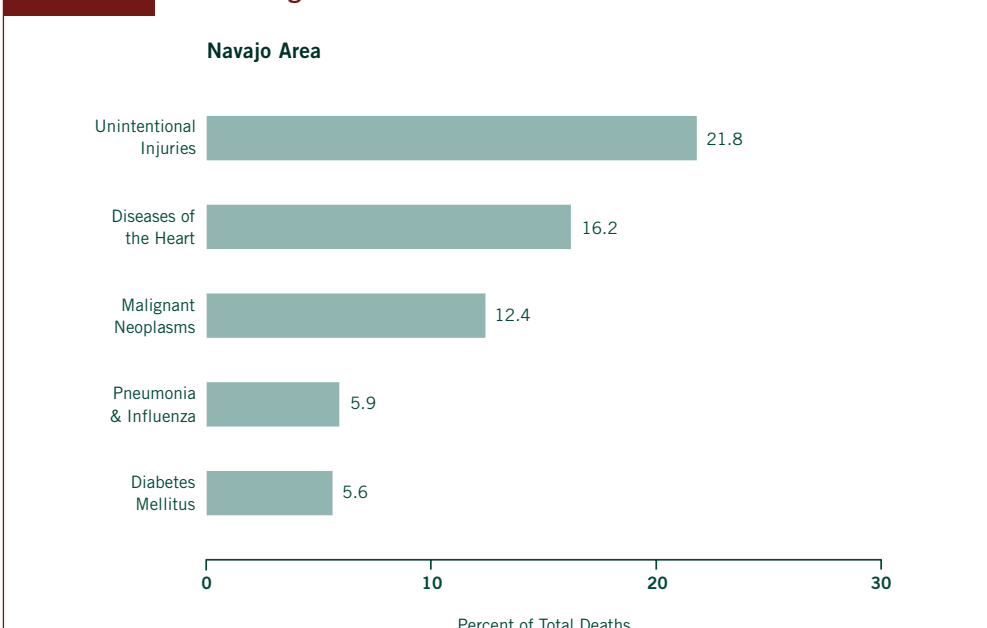


In 1996–98, 21.8 percent of all deaths in the Navajo Area were caused by unintentional injuries, followed by diseases of the heart at 16.2 percent.

Chart 4.12

Leading Causes of Death

Calendar Years 1996-1998

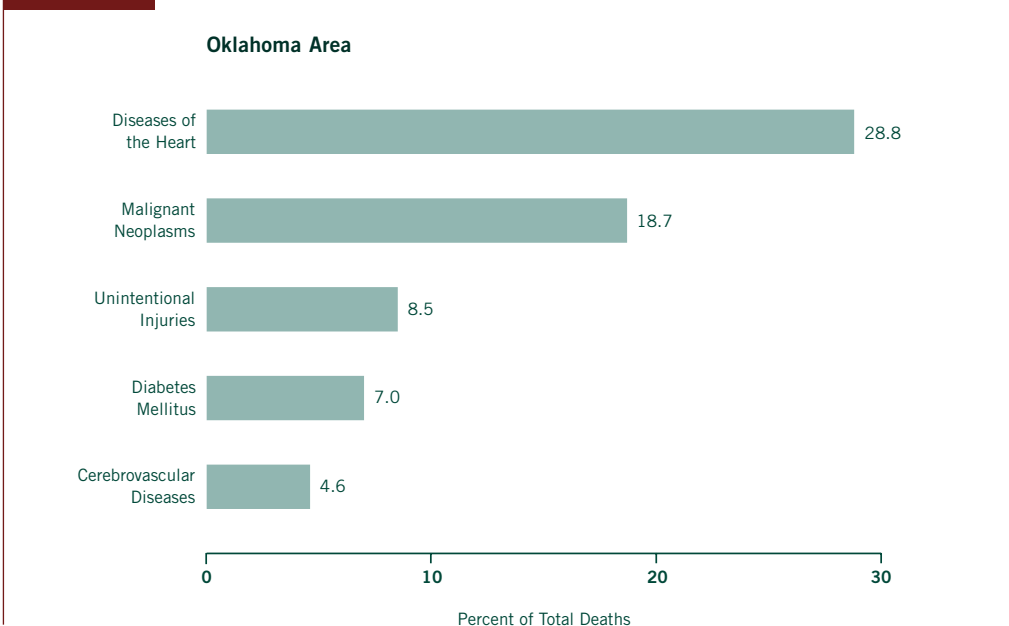


In 1996–98, 28.8 percent of all deaths in the Oklahoma Area were caused by diseases of the heart, followed by malignant neoplasms at 18.7 percent.

Chart 4.13

Leading Causes of Death

Calendar Years 1996-1998

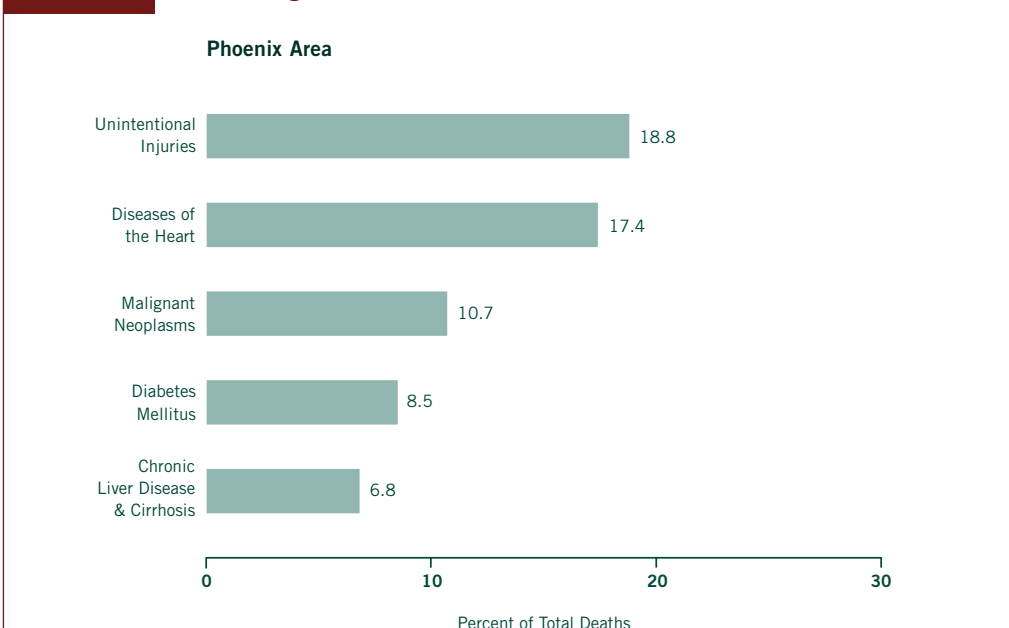


In 1996–98, 18.8 percent of all deaths in the Phoenix Area were caused by unintentional injuries, followed by diseases of the heart at 17.4 percent.

Chart 4.14

Leading Causes of Death

Calendar Years 1996-1998

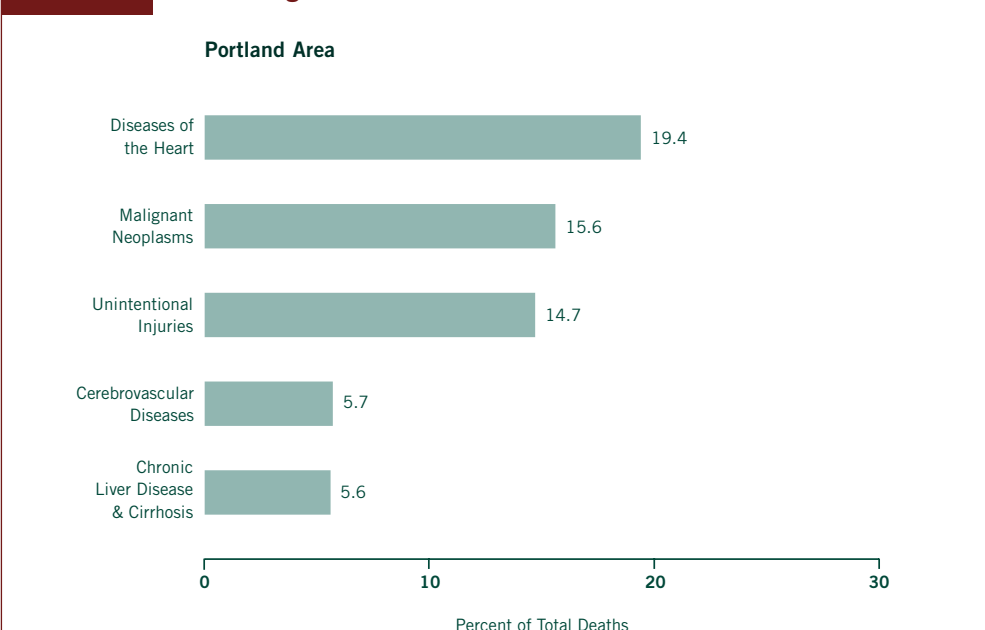


In 1996-98, 19.4 percent of all deaths in the Portland Area were caused by diseases of the heart, followed by malignant neoplasms at 15.6 percent.

Chart 4.15

Leading Causes of Death

Calendar Years 1996-1998

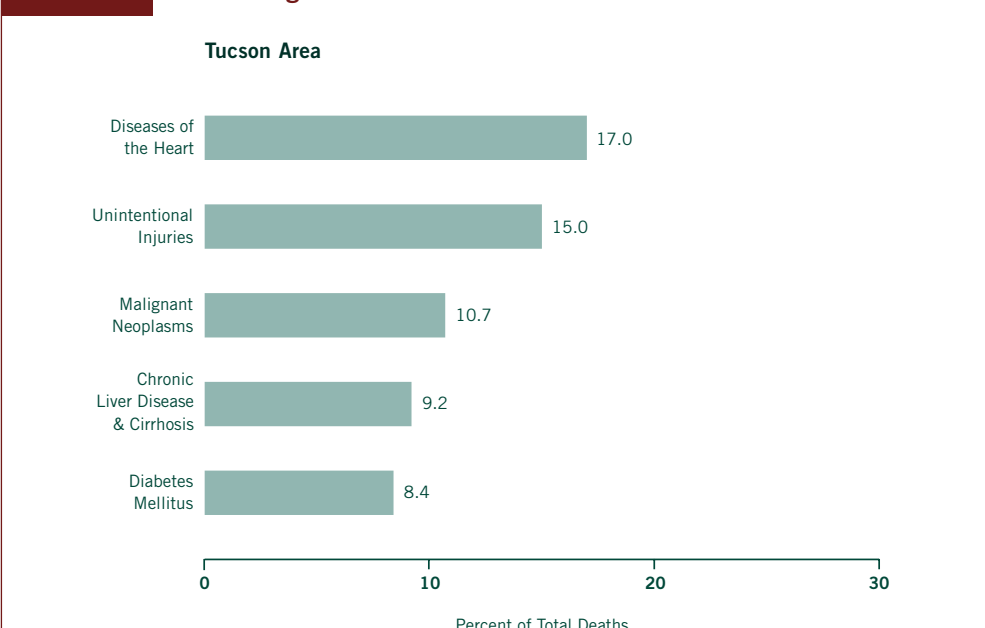


In 1996-98, 17.0 percent of all deaths in the Tucson Area were caused by diseases of the heart, followed by unintentional injuries at 15.0 percent.

Chart 4.16

Leading Causes of Death

Calendar Years 1996-1998



In 1996–98, the age-adjusted injury and poisoning death rate for the IHS service area population was 132.0 deaths per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 2.6 times the U.S. all-races rate (50.2 per 100,000 population) for 1997. The Tucson Area rate (183.9 per 100,000 population), which is the highest among the IHS Areas, is 3.7 times the U.S. all-races rate. The Nashville Area rate (82.2), which is the lowest among the IHS areas, is 1.6 times the U.S. all-races rate.

Chart 4.17

**Age-Adjusted Injury and Poisoning¹
Death Rates**

Calendar Years 1996–1998

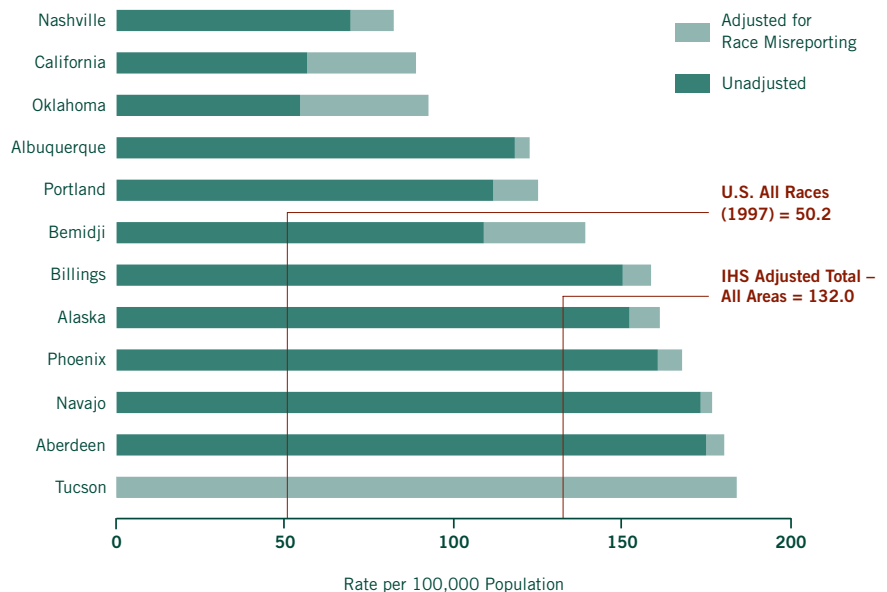


Table 4.17

**Age-Adjusted Injury and Poisoning¹
Death Rates**

Calendar Years 1996–1998

	Deaths ²		Rate ³	
	Unadjusted	Adjusted ⁴	Unadjusted	Adjusted ⁴
U.S. All Races (1997)	146,400		50.2	
All IHS Areas	4,560	5,277	114.7	132.0
Aberdeen	425	439	174.8	180.2
Alaska	423	448	152.1	161.1
Albuquerque	264	275	118.1	122.5
Bemidji	252	327	108.9	139.0
Billings	217	230	150.1	158.5
California	200	318	56.5	88.8
Nashville	149	179	69.4	82.2
Navajo	949	967	173.2	176.6
Oklahoma	465	790	54.4	92.5
Phoenix	600	629	160.5	167.7
Portland	475	535	111.7	125.0
Tucson	141	140	184.6	183.9

¹ Includes the following ICD-9 cause of death groups combined: Motor vehicle accidents-E810-E825. Other accidents-E800-E807, E826-E949. Suicide-E950-E959. Homicide-E960-E978. Injury undetermined whether accidentally or purposely inflicted-E980-E989. Injury resulting from operations of war-E990-E999.

² Includes two deaths with age not reported. Both deaths were in the Tucson Area.

³ Age-adjusted rate per 100,000 population.

⁴ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98, the age-adjusted unintentional injury death rate for the IHS service area population was 94.7 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is over three times higher than the U.S. all-races rate of 30.1 for 1997. The Oklahoma Area has the lowest rate among the IHS Areas (59.3), but it is still almost two times the rate of the U.S. all-races. The highest Area rate (Navajo, 138.5) is 4.6 times the U.S. all-races rate.

Chart 4.18

Age-Adjusted Unintentional Injury Death Rates

Calendar Years 1996-1998

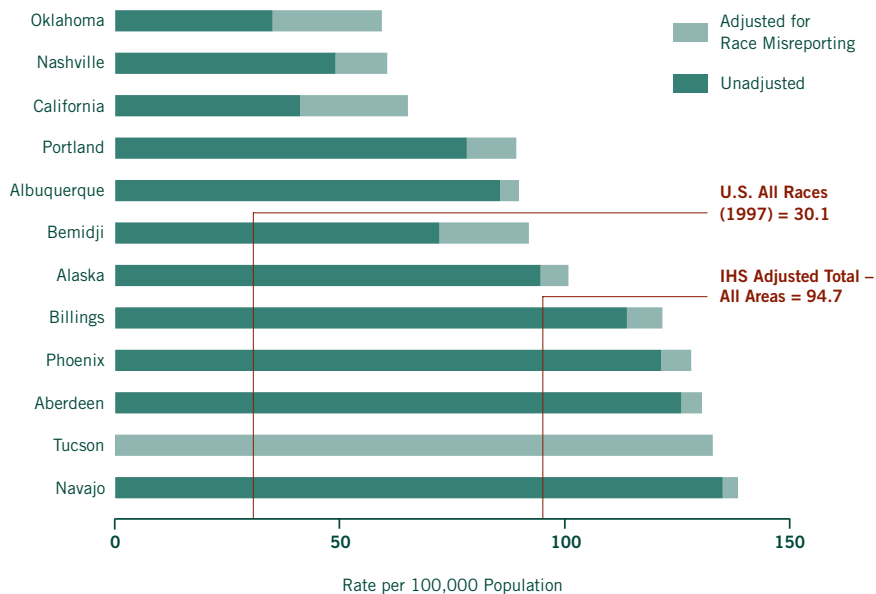


Table 4.18

Age-Adjusted Unintentional Injury Death Rates

Calendar Years 1996-1998

	All Unintentional Injuries				Motor Vehicle Crashes			Other	
					Totals		Percent of Motor Vehicle Crash Deaths	Unintentional Injuries	
	Deaths		Rate ²		Rate ²				
	Unadjusted	Adjusted ³	Unadjusted	Adjusted ³	Unadjusted	Adjusted ³		Unadjusted	Adjusted ³
U.S. All Races (1997)	95,644		30.1		15.9			14.2	
All IHS Areas	3,245	3,761	82.1	94.7	46.6	54.8	19.5%	35.6	39.9
Aberdeen	300	312	125.9	130.5	73.3	77.4	11.1%	52.6	53.1
Alaska	258	275	94.6	100.8	24.4	24.7	20.0%	70.2	76.1
Albuquerque	191	201	85.6	89.8	49.9	53.9	18.9%	35.7	35.9
Bemidji	165	215	72.1	92.0	41.9	55.0	19.7%	30.2	37.0
Billings	165	177	113.8	121.7	74.4	82.5	8.2%	39.5	39.2
California	144	231	41.1	65.1	20.1	31.4	17.5%	21.0	33.7
Nashville	106	133	49.0	60.5	32.1	42.5	23.2%	16.9	18.0
Navajo	735	753	135.1	138.5	84.1	87.2	30.6%	51.0	51.3
Oklahoma	305	514	35.0	59.3	22.2	39.1	9.8%	12.8	20.2
Phoenix	446	472	121.4	128.1	72.6	77.7	23.6%	48.8	50.3
Portland	331	380	78.2	89.2	38.6	45.1	16.0%	39.6	44.1
Tucson	99	98	133.6	132.9	76.4	76.4	23.2%	57.2	56.5

¹ Includes Motor vehicle crashes having ICD-9 codes E810-E825 with a fourth digit code .7. The fourth digit code .7 indicates a pedestrian was the subject decedent as a result of the motor vehicle crash. Percentages are based upon adjusted numbers of deaths.

² Age-adjusted rate per 100,000 population.

³ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98, the age-adjusted suicide death rate for the IHS service area population was 20.2 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 91 percent higher than the U.S. all-races rate of 10.6 per 100,000 population for 1997. The Alaska Area rate (45.9) is 4.3 times the U.S. rate while four other Area rates (Aberdeen, Tucson, Bemidji, and Portland) are at least double the U.S. all-races rate.

Chart 4.19

Age-Adjusted Suicide Death Rates

Calendar Years 1996-1998

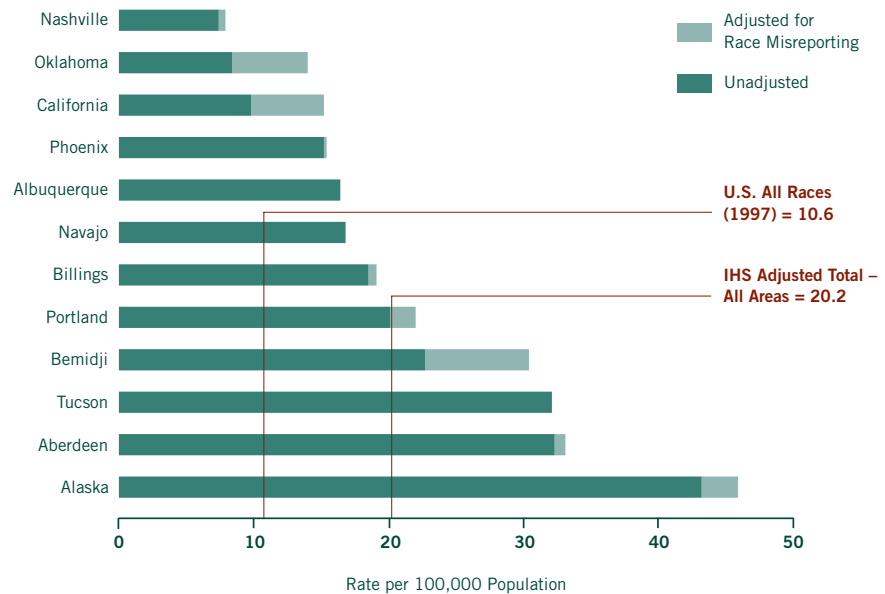


Table 4.19

Age-Adjusted Suicide Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	<i>30,535</i>		<i>10.6</i>	
<i>All IHS Areas</i>	<i>711</i>	<i>818</i>	<i>17.6</i>	<i>20.2</i>
Aberdeen	83	85	32.3	33.1
Alaska	124	132	43.2	45.9
Albuquerque	37	37	16.4	16.4
Bemidji	53	72	22.7	30.4
Billings	27	28	18.5	19.1
California	34	53	9.8	15.2
Nashville	16	17	7.4	7.9
Navajo	94	94	16.8	16.8
Oklahoma	69	116	8.4	14.0
Phoenix	61	62	15.2	15.4
Portland	87	96	20.1	22.0
Tucson	26	26	32.1	32.1

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98, the age-adjusted homicide death rate for the IHS service area population was 14.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 81 percent higher than the U.S. all-races rate of 8.0 per 100,000 population for 1997. The Phoenix (20.7) and Navajo (19.7) rates are more than double the U.S. all-races rate.

Chart 4.20

Age-Adjusted Homicide Death Rates

Calendar Years 1996-1998

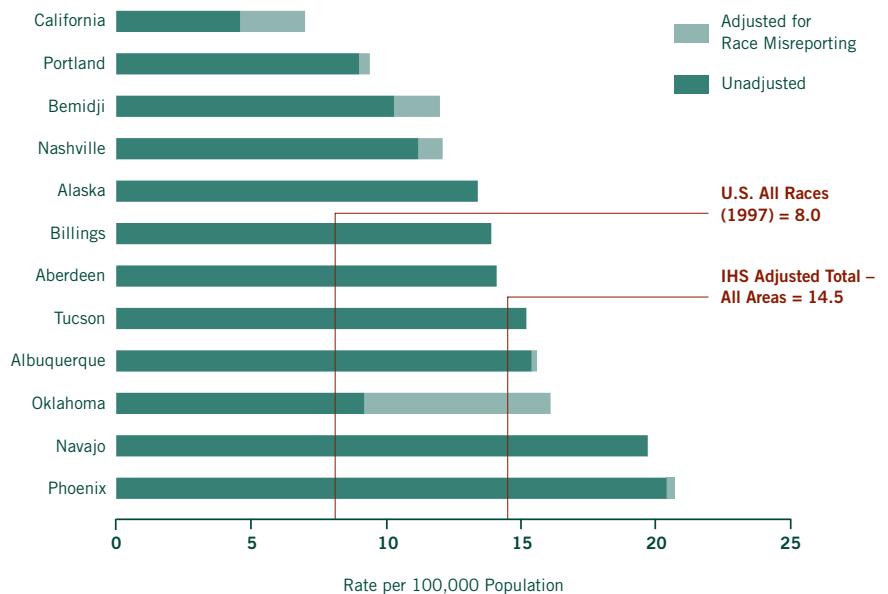


Table 4.20

Age-Adjusted Homicide Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	<i>19,846</i>		<i>8.0</i>	
<i>All IHS Areas</i>	<i>514</i>	<i>594</i>	<i>12.7</i>	<i>14.5</i>
Aberdeen	36	36	14.1	14.1
Alaska	38	38	13.4	13.4
Albuquerque	34	35	15.4	15.6
Bemidji	25	29	10.3	12.0
Billings	20	20	13.9	13.9
California	18	28	4.6	7.0
Nashville	24	26	11.2	12.1
Navajo	111	111	19.7	19.7
Oklahoma	76	135	9.2	16.1
Phoenix	80	82	20.4	20.7
Portland	39	41	9.0	9.4
Tucson	13	13	15.2	15.2

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

NOTE: Includes deaths due to homicide and legal intervention.

In 1996–98 the age-adjusted firearm injury death rate for the IHS service area population was 17.6 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 1.4 times the U.S. all-races rate of 12.2 per 100,000 population for 1997. The Alaska Area rate (40.2) far exceeds the rates of the other Areas and is 1.6 times higher than the next highest Area rate (Tucson, 25.0) and 3.3 times higher than the lowest Area rate (Billings and California, each with rates of 12.2).

Chart 4.21 Age-Adjusted Firearm Injury Death Rates *Calendar Years 1996-1998*

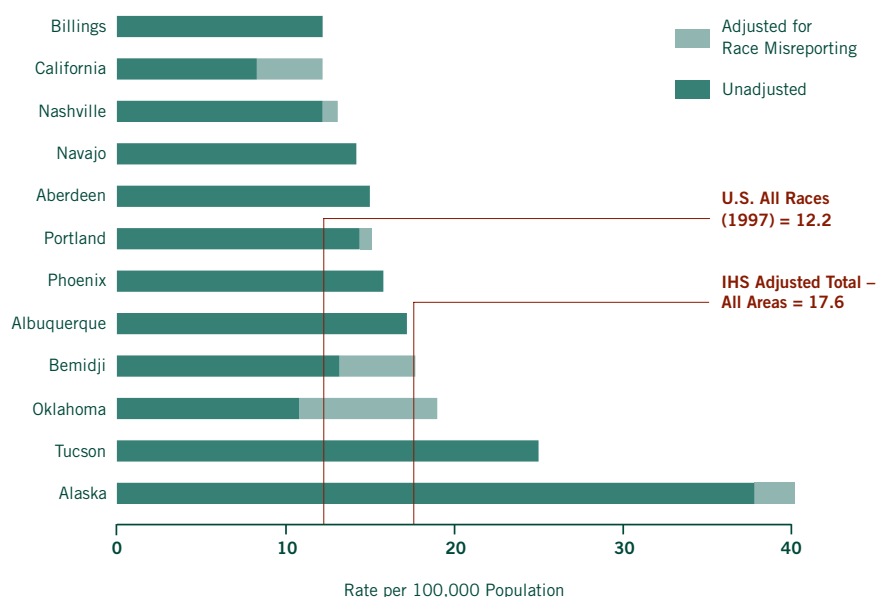


Table 4.21 Age-Adjusted Firearm Injury¹ Death Rates *Calendar Years 1996-1998*

	Deaths		Rate	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	32,436		12.2	
<i>All IHS Areas</i>	603	709	15.0	17.6
Aberdeen	39	39	15.0	15.0
Alaska	108	115	37.8	40.2
Albuquerque	37	37	17.2	17.2
Bemidji	31	42	13.2	17.7
Billings	18	18	12.2	12.2
California	29	43	8.3	12.2
Nashville	25	27	12.2	13.1
Navajo	81	81	14.2	14.2
Oklahoma	88	157	10.8	19.0
Phoenix	64	64	15.8	15.8
Portland	62	65	14.4	15.1
Tucson ²	21	21	25.0	25.0

¹ Includes deaths with ICD-9 codes: Accident caused by firearm missile-E922, Suicide and self-inflicted injury by firearms-E955.0-E955.4, Assault by firearms and legal intervention-E965.0-E965.4, E970, and Injury by firearms, undetermined whether accidentally or purposely inflicted-E985.0-E985.4. Injury by firearm causes exclude explosive and other causes indirectly related to firearms.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98 for the IHS service area population, the age-adjusted death rate for injury and poisoning deaths due to other causes was 2.7 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is slightly more than double the U.S. all-races rate of 1.3 deaths per 100,000 population for 1997. The Area rates should be interpreted with caution because of the relatively small numbers of deaths involved (See *Sources and Limitations of Data: Population Statistics*).

Chart 4.22

**Age-Adjusted Death Rates
for Injury and Poisoning**

Calendar Years 1996-1998

Deaths Due to Other Causes

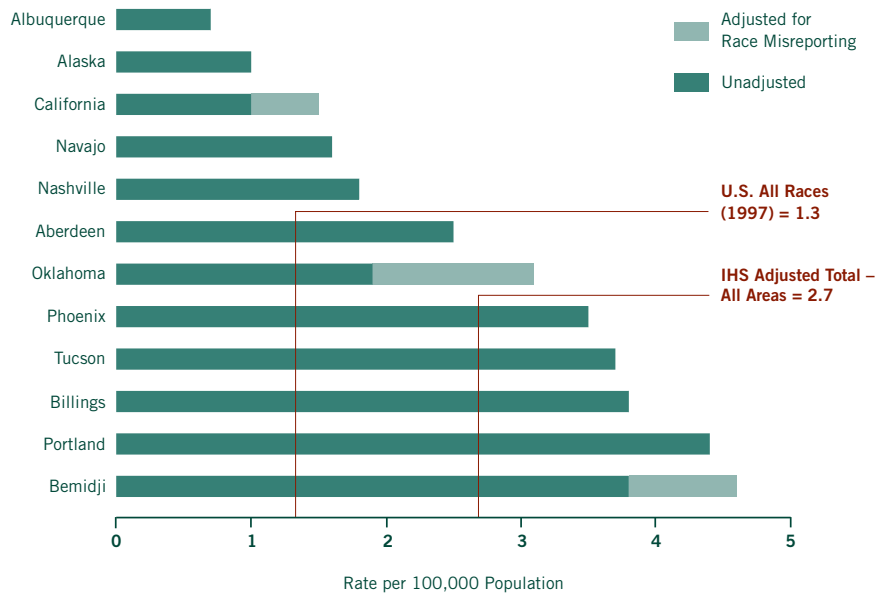


Table 4.22

**Age-Adjusted Death Rates
for Injury and Poisoning**

Calendar Years 1996-1998

Deaths Due to Other Causes¹

	Deaths		Rate ²	
	Unadjusted	Adjusted ³	Unadjusted	Adjusted ³
<i>U.S. All Races (1997)</i>	<i>3,680</i>		<i>1.3</i>	
<i>All IHS Areas</i>	<i>90</i>	<i>104</i>	<i>2.3</i>	<i>2.7</i>
Aberdeen	6	6	2.5	2.5
Alaska	3	3	1.0	1.0
Albuquerque	2	2	0.7	0.7
Bemidji	9	11	3.8	4.6
Billings	5	5	3.8	3.8
California	4	6	1.0	1.5
Nashville	3	3	1.8	1.8
Navajo	9	9	1.6	1.6
Oklahoma	15	25	1.9	3.1
Phoenix	13	13	3.5	3.5
Portland	18	18	4.4	4.4
Tucson	3	3	3.7	3.7

¹ Includes the following ICD-9 cause of death groups combined: Injury undetermined whether accidentally or purposely inflicted-E980-E989. Injury resulting from operations of war-E990-E999.

² Age-adjusted rate per 100,000 population. Rates based on a small number of deaths should be interpreted with caution.

³ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

The age-adjusted alcohol-related death rate for the IHS service area population in 1996-98 was 46.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 7.4 times the U.S. all-races rate of 6.3 for 1997. The Aberdeen Area rate of 87.4 is 13.9 times the U.S. all-races rate and 1.3 times the second highest Area rate, Albuquerque at 69.1.

Chart 4.23

Age-Adjusted Alcohol-Related Death Rates

Calendar Years 1996-1998

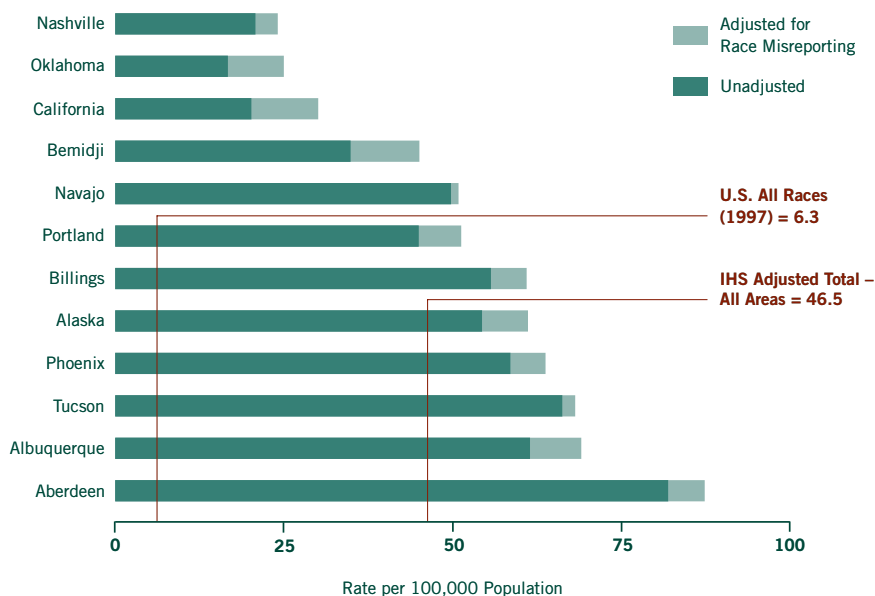


Table 4.23

Age-Adjusted Alcohol-Related Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	19,576		6.3	
<i>All IHS Areas</i>	1,356	1,563	40.3	46.5
Aberdeen	158	168	82.0	87.4
Alaska	127	143	54.4	61.2
Albuquerque	108	121	61.5	69.1
Bemidji	66	85	34.9	45.1
Billings	67	74	55.7	61.0
California	61	91	20.2	30.1
Nashville	39	45	20.8	24.1
Navajo	226	231	49.8	50.9
Oklahoma	126	189	16.7	25.0
Phoenix	180	195	58.6	63.8
Portland	157	179	45.0	51.3
Tucson	41	42	66.3	68.2

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

The age-adjusted diabetes death rate for the IHS service area population in 1996–98 was 52.8 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The diabetes death rate increased 13.8 percent from the rate experienced by the IHS service area during 1994–96 (46.4 per 100,000 population). The 1996–98 AI/AN rate is 3.9 times the U.S. all-races rate of 13.5 per 100,000 population for 1997. The IHS Area rates vary widely, ranging from 10.8 in Alaska (which is twenty per-cent lower than the U.S. all-races rate) to 90.2 in Tucson (which is 568 percent higher than the U.S. all-races rate).

Chart 4.24

Age-Adjusted Diabetes Mellitus Death Rates

Calendar Years 1996-1998

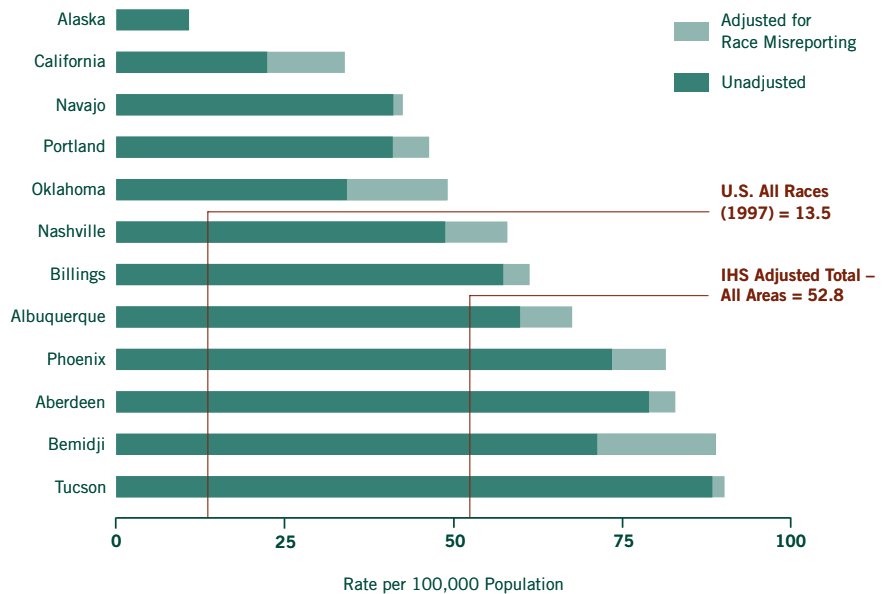


Table 4.24

Age-Adjusted Diabetes Mellitus Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	62,636		13.5	
<i>All IHS Areas</i>	1,511	1,780	44.4	52.8
Aberdeen	155	162	79.0	82.9
Alaska	24	24	10.8	10.8
Albuquerque	106	118	59.9	67.6
Bemidji	134	165	71.3	88.9
Billings	65	69	57.4	61.3
California	69	103	22.4	33.9
Nashville	94	111	48.8	58.0
Navajo	187	193	41.1	42.5
Oklahoma	301	422	34.2	49.1
Phoenix	194	214	73.5	81.5
Portland	128	144	41.0	46.4
Tucson	54	55	88.4	90.2

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

The age-adjusted pneumonia and influenza death rate for the IHS service area population in 1996-98 was 21.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 1.7 times the U.S. all-races rate of 12.9 per 100,000 population for 1997. The three highest Area rates in Tucson (36.5), Aberdeen (31.1), and Navajo (30.8), are at least double the lowest Area rate in California (13.8).

Chart 4.25

Age-Adjusted Pneumonia and Influenza Death Rates

Calendar Years 1996-1998

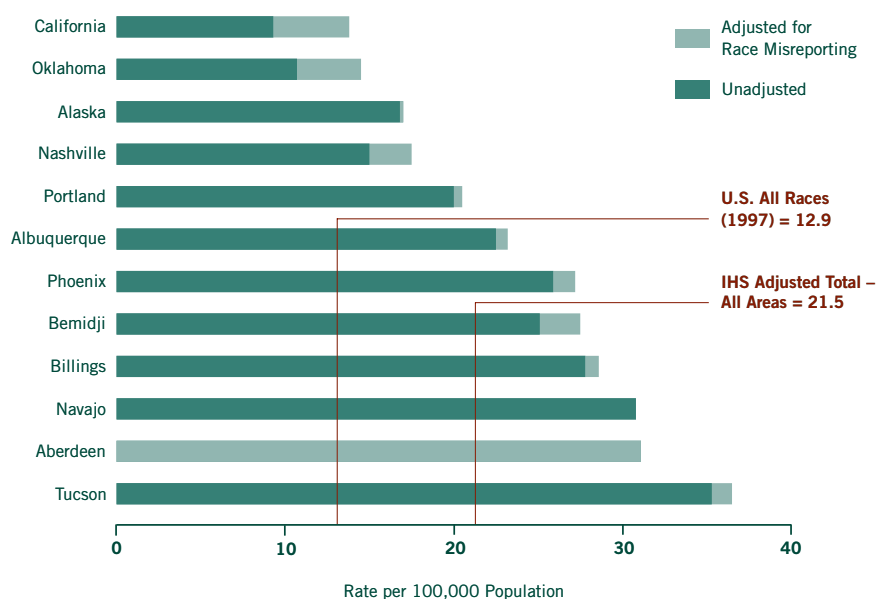


Table 4.25

Age-Adjusted Pneumonia and Influenza Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	86,449		12.9	
<i>All IHS Areas</i>	845	915	19.8	21.5
Aberdeen	71 ³	70 ³	31.3 ³	31.1 ³
Alaska	46	47	16.8	17.0
Albuquerque	54	56	22.5	23.2
Bemidji	56	61	25.1	27.5
Billings	37	38	27.8	28.6
California	33	49	9.3	13.8
Nashville	34	36	15.0	17.5
Navajo	205 ³	204 ³	30.8 ³	30.8 ³
Oklahoma	128	166	10.7	14.5
Phoenix	86	91	25.9	27.2
Portland	71	73	20.0	20.5
Tucson	24	24	35.3	36.5

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race the death certificate.

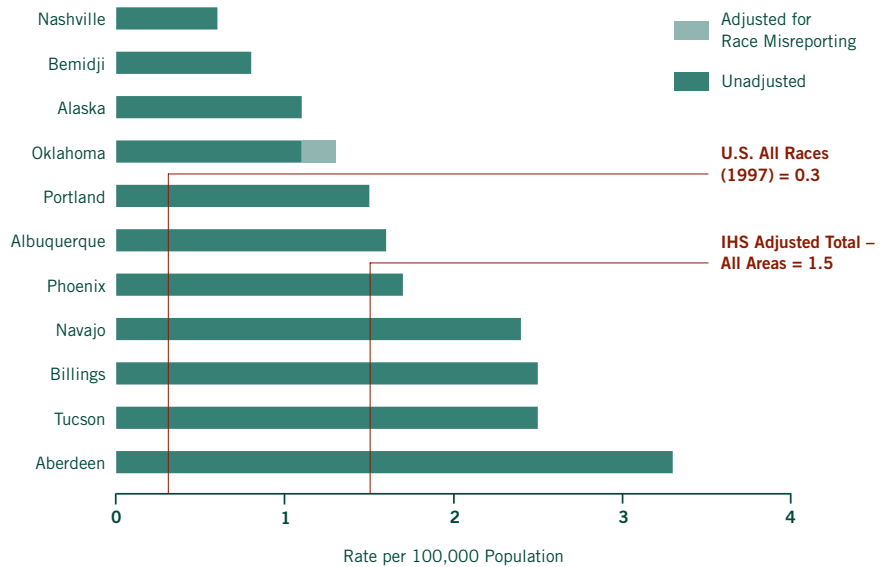
³ The adjusted numbers and rates (Aberdeen and Navajo Areas) are lower than the unadjusted numbers and rates because the linked birth/infant death file (used to obtain the adjusted counts of infant deaths) had one less death for this cause than did the unadjusted mortality file (1996-1998 data) for each of these two Areas.

In 1996–98, the age-adjusted tuberculosis death rate for the IHS service area population was 1.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is five times higher than the U.S. all-races rate of 0.3 per 100,000 population for 1997. The Area rates should be interpreted with caution because of the small number of deaths involved. The Navajo (eleven deaths) and Oklahoma (twelve deaths) Areas had the highest numbers of deaths over the three-year period (See *Sources and Limitations of Data: Population Statistics*).

Chart 4.26

Age-Adjusted Tuberculosis Death Rates

Calendar Years 1996–1998



NOTE: IHS unadjusted rates and rates adjusted for race misreporting are the same except for Oklahoma (1.1 unadjusted, 1.3 adjusted).

Table 4.26

Age-Adjusted Tuberculosis Death Rates

Calendar Years 1996–1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	1,166		0.3	
<i>All IHS Areas</i>	51	53	1.4	1.5
Aberdeen	6	6	3.3	3.3
Alaska	2	2	1.1	1.1
Albuquerque	3	3	1.6	1.6
Bemidji	2	2	0.8	0.8
Billings	3	3	2.5	2.5
California	—	—	—	—
Nashville	1	1	0.6	0.6
Navajo	11	11	2.4	2.4
Oklahoma	10	12	1.1	1.3
Phoenix	6	6	1.7	1.7
Portland	5	5	1.5	1.5
Tucson	2	2	2.5	2.5

— Represents zero.

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted gastrointestinal diseases death rate for the IHS service area population was 1.8 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is 38 percent greater than the U.S. all-races rate for 1997 (1.3 per 100,000 population). The Area rates should be interpreted with caution because of the small number of deaths involved. The largest number of deaths over the three-year period for any one Area was fifteen deaths in the Portland Area (see section *Sources and Limitations of Data: Population Statistics*).

Chart 4.27

Age-Adjusted Gastrointestinal Diseases Death Rates

Calendar Years 1996-1998

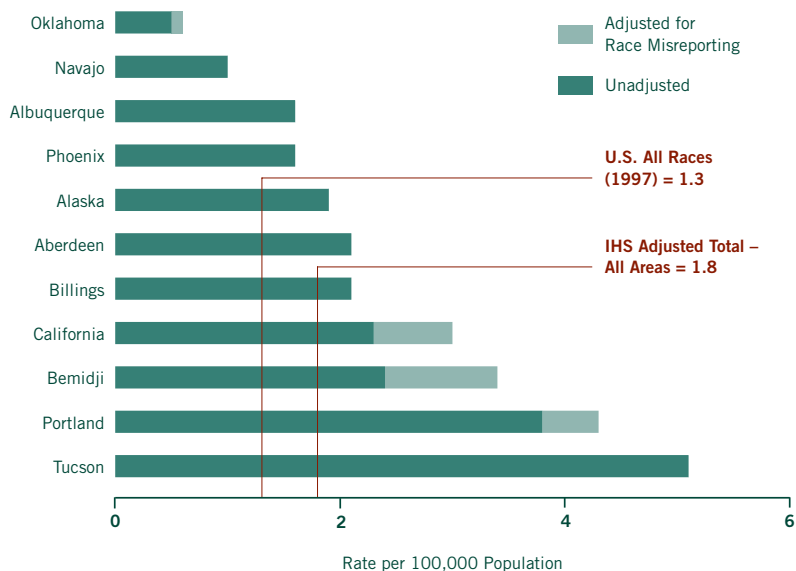


Table 4.27

Age-Adjusted Gastrointestinal Diseases Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	6,988		1.3	
<i>All IHS Areas</i>	64	71	1.6	1.8
Aberdeen	4	4	2.1	2.1
Alaska	5	5	1.9	1.9
Albuquerque	4	4	1.6	1.6
Bemidji	5	6	2.4	3.4
Billings	3	3	2.1	2.1
California	8	10	2.3	3.0
Nashville	—	—	—	—
Navajo	5	5	1.0	1.0
Oklahoma	8	10	0.5	0.6
Phoenix	5	5	1.6	1.6
Portland	13	15	3.8	4.3
Tucson	4	4	5.1	5.1

— Represents zero.

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted heart disease death rate for the IHS service area population was 157.1 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is twenty percent higher than the U.S. all-races rate of 130.5 per 100,000 population in 1997. The lowest Area rate in Albuquerque (85.2) is 35 percent lower than the U.S. all-races rate, while the highest Area rate in Bemidji (266.7) is 104 percent higher than the U.S. all-races rate.

Chart 4.28

Age-Adjusted Heart Disease Death Rates

Calendar Years 1996-1998

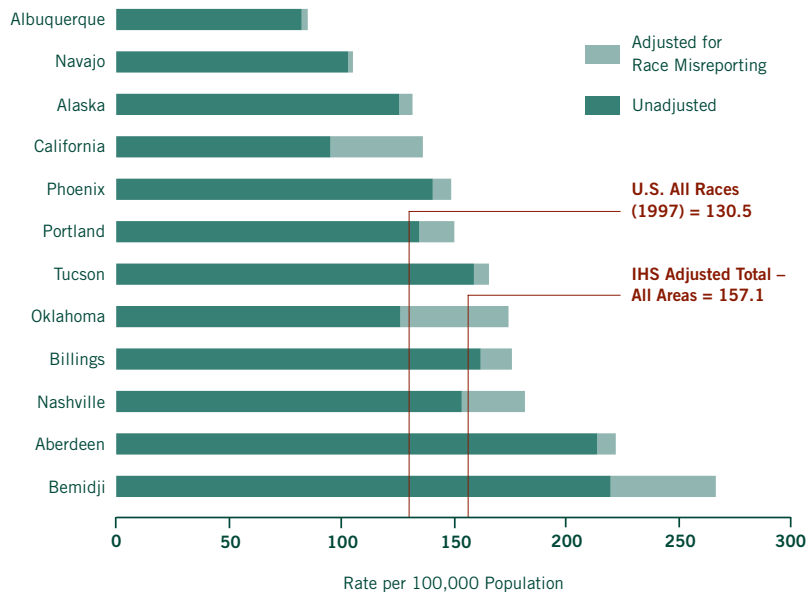


Table 4.28

Age-Adjusted Heart Disease Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	726,974		130.5	
<i>All IHS Areas</i>	4,967	5,811	132.9	157.1
Aberdeen	441	457	213.9	222.2
Alaska	297	310	125.8	131.8
Albuquerque	166	170	82.5	85.2
Bemidji	433	521	219.9	266.7
Billings	186	201	162.1	176.0
California	315	444	95.3	136.4
Nashville	305	359	153.7	181.8
Navajo	549	559	103.2	105.3
Oklahoma	1,301	1,741	126.4	174.5
Phoenix	413	436	140.8	149.0
Portland	454	502	134.8	150.4
Tucson	107	111	159.1	165.8

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted cerebrovascular diseases death rate for the IHS service area population was 29.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The AI/AN rate is fourteen percent higher than the U.S. all-races rate of 25.9 per 100,000 population for 1997. The IHS Area rates differ considerably between Areas; the Bemidji rate of 50.6 per 100,000 population is 2.6 times higher than the Navajo rate of 19.8.

Chart 4.29

Age-Adjusted Cerebrovascular Diseases Death Rates

Calendar Years 1996-1998

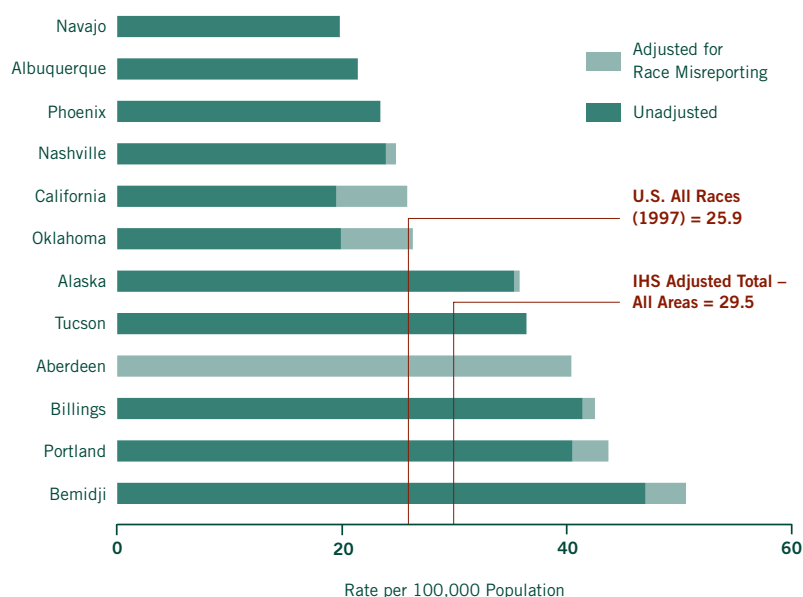


Table 4.29

Age-Adjusted Cerebrovascular Diseases Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	159,791		25.9	
<i>All IHS Areas</i>	1,061	1,164	26.7	29.5
Aberdeen	84 ³	83 ³	40.6 ³	40.4 ³
Alaska	90	91	35.3	35.8
Albuquerque	49	49	21.4	21.4
Bemidji	100	108	47.0	50.6
Billings	50	51	41.4	42.5
California	66	86	19.5	25.8
Nashville	50	52	23.9	24.8
Navajo	122	122	19.8	19.8
Oklahoma	219	281	19.9	26.3
Phoenix	70	70	23.4	23.4
Portland	136	146	40.5	43.7
Tucson	25	25	36.4	36.4

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

³ The adjusted number and rate (Aberdeen Area) is lower than the unadjusted number and rate because the linked birth/infant death file (used to obtain the adjusted counts for infant deaths) had one less death for this cause than did the unadjusted mortality file (1996-1998 data).

In 1996-98, the age-adjusted malignant neoplasm death rate for the IHS service area population was 124.0 per 100,000 population. The rate is adjusted for misreporting of AI/AN race on the death certificate. The 1996-98 AI/AN rate is 6.3 percent higher than the 1994-96 AI/AN rate (116.6). The AI/AN rate is slightly less than the U.S. all-races rate of 125.6 for 1997. Five IHS Areas have a rate greater than the U.S. all-races rate; Bemidji (225.3), Alaska (194.5), Aberdeen (168.8), Billings (154.3), and Portland (126.0).

Chart 4.30

Age-Adjusted Malignant Neoplasm Death Rates

Calendar Years 1996-1998

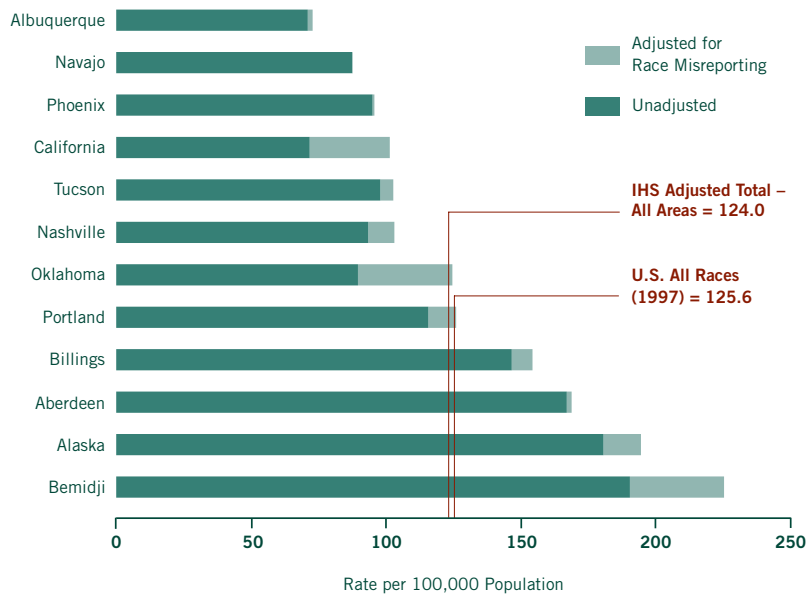


Table 4.30

Age-Adjusted Malignant Neoplasm Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	<i>539,577</i>		<i>125.6</i>	
<i>All IHS Areas</i>	<i>3,737</i>	<i>4,290</i>	<i>107.5</i>	<i>124.0</i>
Aberdeen	322	326	167.0	168.8
Alaska	386	414	180.6	194.5
Albuquerque	130	133	71.0	72.8
Bemidji	370	435	190.4	225.3
Billings	164	172	146.6	154.3
California	222	311	71.7	101.4
Nashville	180	197	93.4	103.1
Navajo	427	427	87.5	87.5
Oklahoma	833	1,135	89.6	124.6
Phoenix	265	267	95.0	95.7
Portland	371	403	115.7	126.0
Tucson	67	70	97.9	102.7

¹ Age-adjusted rate per 100,000 population.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted lung cancer death rate for the IHS service area population was 33.5 per 100,000 population. The definition of lung cancer has been expanded to include the trachea and bronchus. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996–98 AI/AN rate was almost six percent higher than the comparable 1994–96 AI/AN rate (31.7). The 1996–98 AI/AN rate is ten percent less than the U.S. all-races rate of 37.4 deaths per 100,000 population in 1997. Five IHS Areas (Bemidji, Alaska, Aberdeen, Billings and Portland) have rates exceeding the U.S. all-races rate.

Chart 4.31

Age-Adjusted Lung Cancer Death Rates

Calendar Years 1996-1998

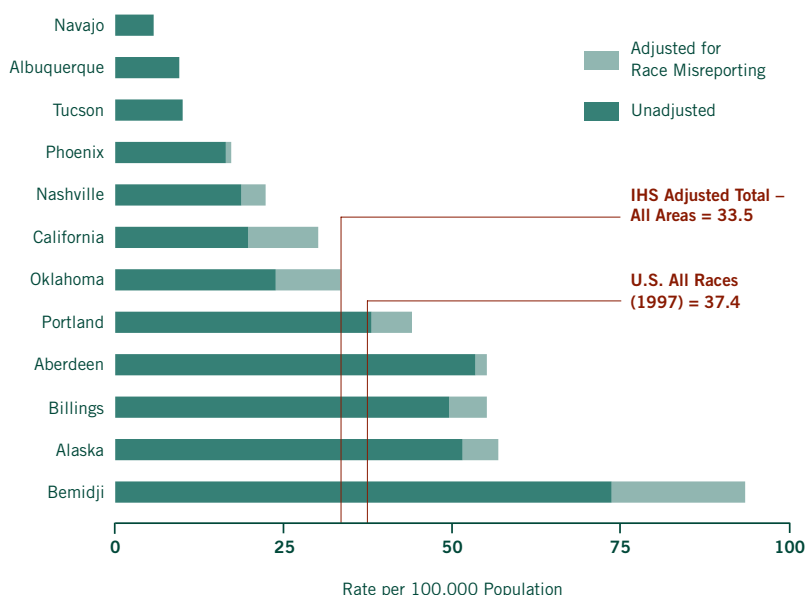


Table 4.31

Age-Adjusted Lung Cancer Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	153,276		37.4	
<i>All IHS Areas</i>	920	1,120	27.5	33.5
Aberdeen	97	100	53.4	55.1
Alaska	108	119	51.5	56.8
Albuquerque	16	16	9.5	9.5
Bemidji	141	179	73.6	93.4
Billings	53	59	49.5	55.1
California	60	91	19.7	30.1
Nashville	34	40	18.7	22.3
Navajo	27	27	5.7	5.7
Oklahoma	219	304	23.8	33.4
Phoenix	43	45	16.4	17.2
Portland	115	133	38.0	44.0
Tucson	7	7	10.0	10.0

¹ Lung cancer death includes deaths due to cancers of the trachea, bronchus and lung, ICD-9 codes 162.0 to 162.9.

² Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

³ Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996-98, the age-adjusted female breast cancer death rate in the IHS service area population was 15.6 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996-98 AI/AN rate was almost eight percent higher than the comparable 1994-96 AI/AN rate (14.5 deaths per 100,000 population). The 1996-98 AI/AN rate is twenty percent less than the U.S. all-races rate of 19.4 per 100,000 population for 1997. Four Areas have rates that exceed the U.S. all-races rate: Portland (24.7), Billings (22.3), Aberdeen (21.9), and Alaska (20.0).

Chart 4.32

Age-Adjusted Female Breast Cancer Death Rates

Calendar Years 1996-1998

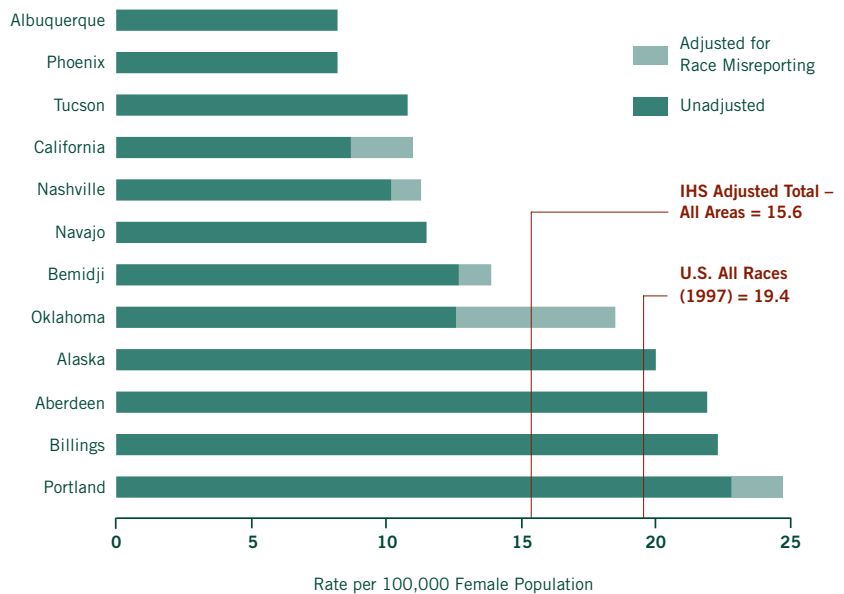


Table 4.32

Age-Adjusted Female Breast Cancer Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	41,986		19.4	
<i>All IHS Areas</i>	247	281	13.6	15.6
Aberdeen	22	22	21.9	21.9
Alaska	23	23	20.0	20.0
Albuquerque	7	7	8.2	8.2
Bemidji	14	15	12.7	13.9
Billings	12	12	22.3	22.3
California	15	19	8.7	11.0
Nashville	12	13	10.2	11.3
Navajo	28	28	11.5	11.5
Oklahoma	58	83	12.6	18.5
Phoenix	12	12	8.2	8.2
Portland	39	42	22.8	24.7
Tucson	5	5	10.8	10.8

¹ Age-adjusted rate per 100,000 female population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted cervical cancer death rate in the IHS service area population was 4.2 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996–98 AI/AN rate was over ten percent higher than the comparable 1994–96 AI/AN rate (3.8 per 100,000 population). The 1996–98 AI/AN rate is 68 percent greater than the U.S. all-races rate of 2.5 per 100,000 population for 1997. The Area rates should be interpreted with caution because of the small number of deaths involved. The largest numbers of cervical cancer deaths occurred in the Oklahoma (28 deaths) and Navajo (twelve deaths) Areas during the three-year period (see section *Sources and Limitations of Data: Population Statistics*).

Chart 4.33

Age-Adjusted Cervical Cancer Death Rates

Calendar Years 1996-1998

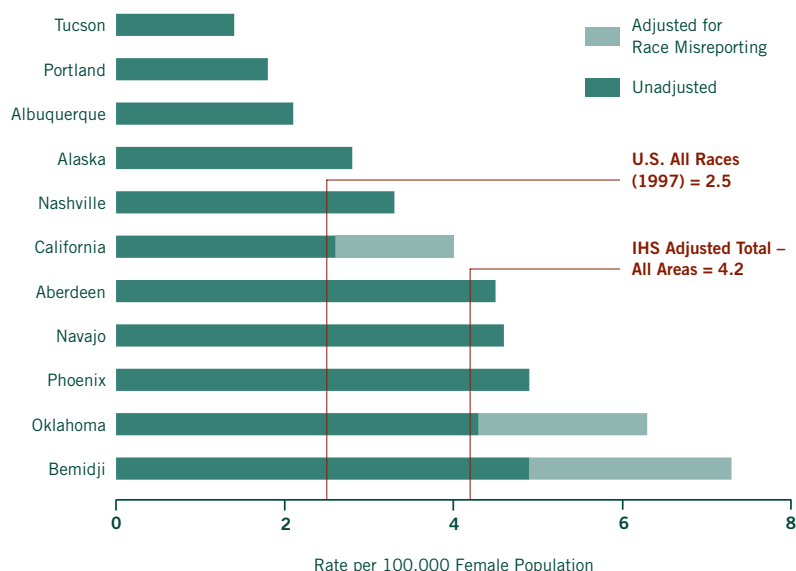


Table 4.33

Age-Adjusted Cervical Cancer Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	4,503		2.5	
<i>All IHS Areas</i>	67	79	3.5	4.2
Aberdeen	5	5	4.5	4.5
Alaska	3	3	2.8	2.8
Albuquerque	2	2	2.1	2.1
Bemidji	4	6	4.9	7.3
Billings	—	—	—	—
California	4	6	2.6	4.0
Nashville	4	4	3.3	3.3
Navajo	12	12	4.6	4.6
Oklahoma	20	28	4.3	6.3
Phoenix	8	8	4.9	4.9
Portland	4	4	1.8	1.8
Tucson	1	1	1.4	1.4

— Represents zero.

¹ Age-adjusted rate per 100,000 female population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

The age-adjusted colon-rectal cancer death rate for the IHS service area population in 1996-98 was 14.1 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996-98 AI/AN rate was twelve percent higher than the comparable 1994-96 AI/AN rate (12.6 per 100,000 population). The 1996-98 AI/AN rate is almost seventeen percent higher than the U.S. all-races rate in 1997 (12.1 per 100,000 population). The highest IHS Area rate (Bemidji, 33.4) is 2.8 times the U.S. all-races rate, while the lowest Area rate (Navajo, 6.1) is about half the U.S. all-races rate.

Chart 4.34

Age-Adjusted Colon-Rectal Cancer Death Rates

Calendar Years 1996-1998

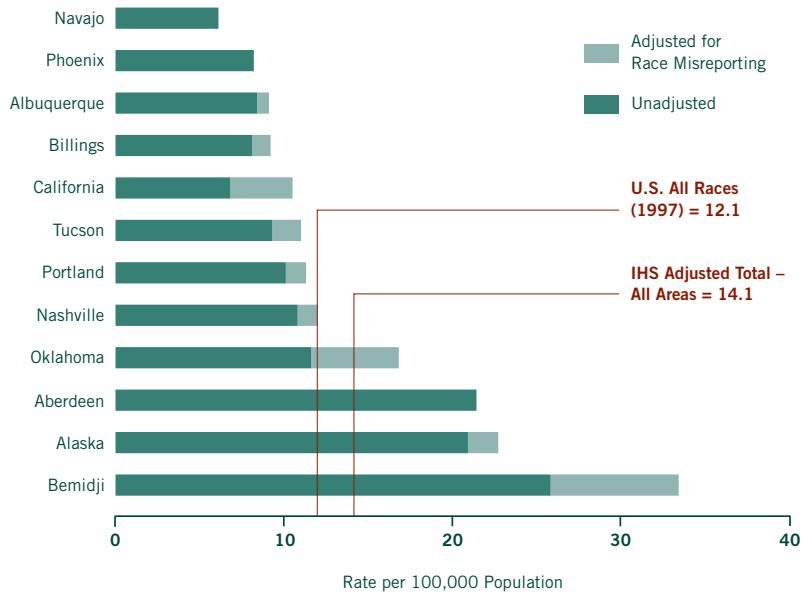


Table 4.34

Age-Adjusted Colon-Rectal Cancer Death Rates

Calendar Years 1996-1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	<i>57,155</i>		<i>12.1</i>	
<i>All IHS Areas</i>	<i>409</i>	<i>493</i>	<i>11.6</i>	<i>14.1</i>
Aberdeen	42	42	21.4	21.4
Alaska	46	50	20.9	22.7
Albuquerque	16	17	8.4	9.1
Bemidji	51	65	25.8	33.4
Billings	10	11	8.1	9.2
California	21	32	6.8	10.5
Nashville	20	22	10.8	12.0
Navajo	31	31	6.1	6.1
Oklahoma	110	156	11.6	16.8
Phoenix	22	22	8.2	8.2
Portland	34	38	10.1	11.3
Tucson	6	7	9.3	11.0

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted prostate cancer death rate in the IHS service area population was 11.5 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996–98 AI/AN rate was eleven percent lower than the comparable 1994–96 AI/AN rate (12.9 per 100,000 population). The 1996–98 AI/AN rate is seventeen percent lower than the U.S. all-races rate of 13.9 per 100,000 population in 1997. Only the rates for Bemidji (20.6) and Oklahoma (14.4) exceed the rate for the U.S. all-races.

Chart 4.35

Age-Adjusted Prostate Cancer Death Rates

Calendar Years 1996–1998

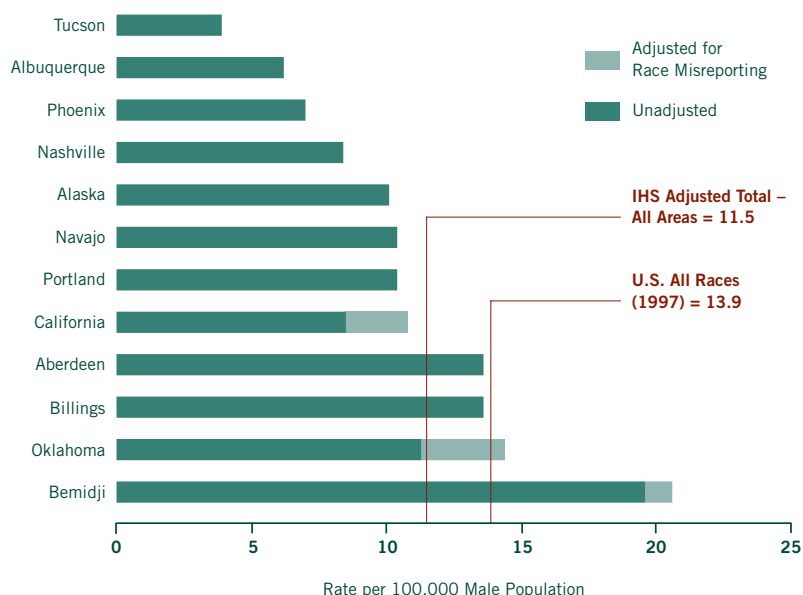


Table 4.35

Age-Adjusted Prostate Cancer Death Rates

Calendar Years 1996–1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	32,891		13.9	
<i>All IHS Areas</i>	174	192	10.4	11.5
Aberdeen	12	12	13.6	13.6
Alaska	10	10	10.1	10.1
Albuquerque	7	7	6.2	6.2
Bemidji	18	19	19.6	20.6
Billings	7	7	13.6	13.6
California	12	15	8.5	10.8
Nashville	7	7	8.4	8.4
Navajo	24	24	10.4	10.4
Oklahoma	52	66	11.3	14.4
Phoenix	9	9	7.0	7.0
Portland	14	14	10.4	10.4
Tucson	2	2	3.9	3.9

¹ Age-adjusted rate per 100,000 *male* population.

Rates based on a small number of deaths should be interpreted with caution.

² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the age-adjusted human immunodeficiency virus (HIV) infection death rate for the IHS service area population was 3.3 per 100,000 population. The age-adjusted rate is also adjusted for misreporting of AI/AN race on the death certificate. The 1996–98 AI/AN rate was 47 percent lower than the comparable 1994–96 AI/AN rate (6.2 per 100,000 population). The 1996–98 AI/AN rate is 43 percent lower than the 1997 U.S. rate of 5.8 per 100,000 population. Some of the Area rates should be interpreted with caution because of the small number of deaths involved. The highest Area rate (Oklahoma, 4.8 based on 32 deaths) is 83 percent of the U.S. all-races rate (see section *Sources and Limitations of Data: Population Statistics*).

Chart 4.36

Age-Adjusted Human Immunodeficiency Virus (HIV) Infection Death Rates

Calendar Years 1996–1998

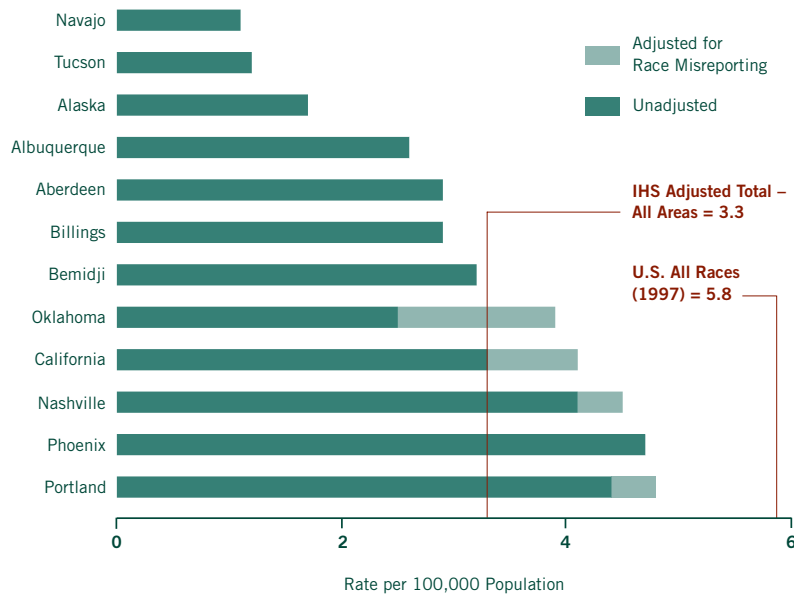


Table 4.36

Age-Adjusted Human Immunodeficiency Virus (HIV) Infection Death Rates

Calendar Years 1996–1998

	Deaths		Rate ¹	
	Unadjusted	Adjusted ²	Unadjusted	Adjusted ²
<i>U.S. All Races (1997)</i>	16,516		5.8	
<i>All IHS Areas</i>	112	130	2.9	3.3
Aberdeen	6	6	2.9	2.9
Alaska	5	5	1.7	1.7
Albuquerque	6	6	2.6	2.6
Bemidji	7	7	3.2	3.2
Billings	4	4	2.9	2.9
California	11	14	3.3	4.1
Nashville	9	10	4.1	4.5
Navajo	6	6	1.1	1.1
Oklahoma	20	32	2.5	3.9
Phoenix	18	18	4.7	4.7
Portland	19	21	4.4	4.8
Tucson	1	1	1.2	1.2

¹ Age-adjusted rate per 100,000 population.

Rates based on a small number of deaths should be interpreted with caution.

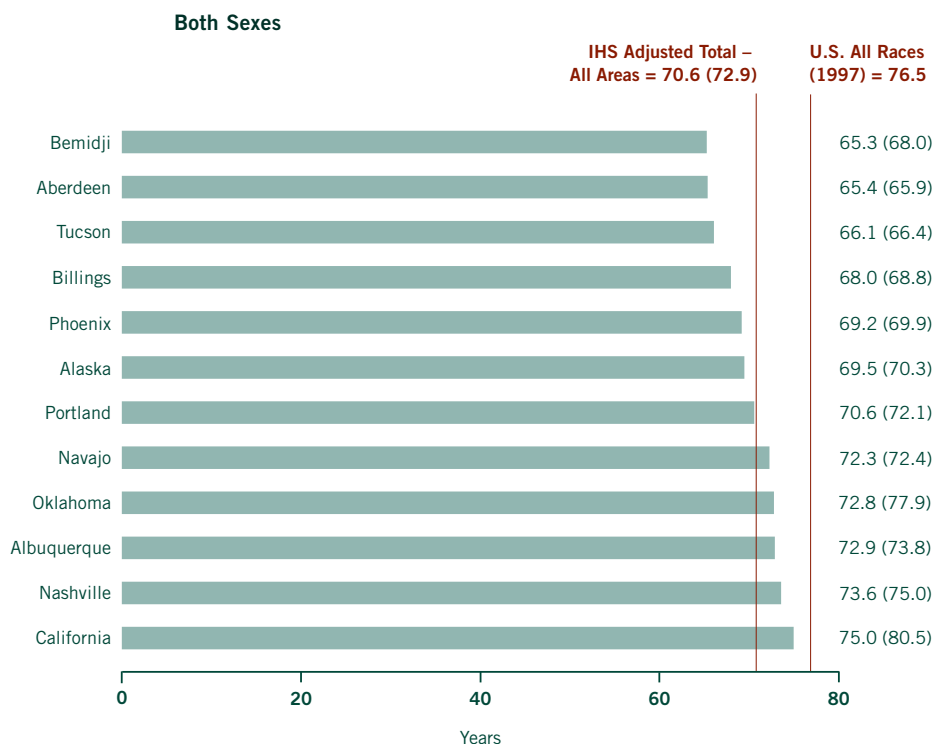
² Adjusted to compensate for misreporting of American Indian/Alaska Native race on the death certificate.

In 1996–98, the life expectancy at birth (both sexes) for the IHS service area population was 70.6 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the death certificate. Life expectancy at birth is 5.9 years less than the 1997 figure of 76.5 years for the U.S. all-races population. None of the IHS Areas has a life expectancy greater than the U.S. figure. Bemidji Area has a life expectancy (65.3) 11.2 years less than the U.S. figure.

Chart 4.37

Life Expectancy at Birth

Calendar Years 1996-1998



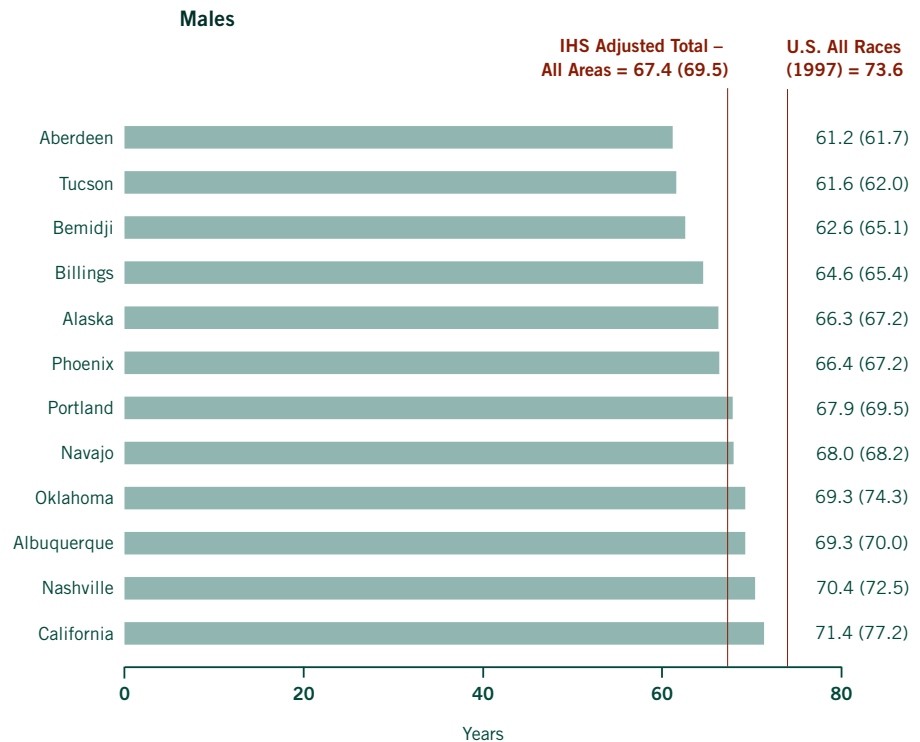
NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race are shown in parentheses.

In 1996-98, the life expectancy at birth for males in the IHS service area population was 67.4 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the death certificate. Life expectancy at birth is 6.2 years less than the 1997 figure of 73.6 years for the U.S. all-races male population. AI/AN males in the Aberdeen Area (61.2) can expect to live from birth 12.4 years less than U.S. males.

Chart 4.38

Life Expectancy at Birth

Calendar Years 1996-1998



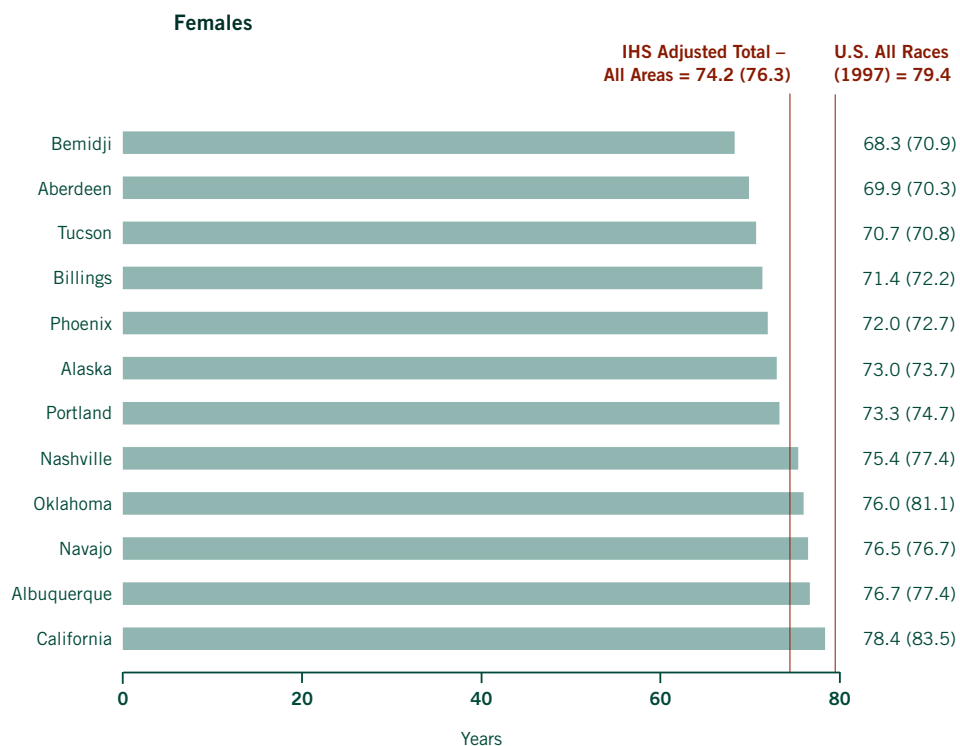
NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race are shown in parentheses.

In 1996–98, the life expectancy at birth for females in the IHS service area population was 74.2 years. Life expectancy calculations are based on rates adjusted for misreporting of AI/AN race on the death certificate. Life expectancy at birth is 5.2 years less than the 1997 figure of 79.4 years for the U.S. all-races female population. AI/AN females in the California Area (78.4) had the best Area life expectancy, yet can expect to live from birth one year less than their counterparts in the U.S. all-races population. Females in the Bemidji Area have a life expectancy (68.3) that is 11.1 years less than that of U.S. females.

Chart 4.39

Life Expectancy at Birth

Calendar Years 1996-1998



NOTE: Life expectancies not adjusted for misreporting of American Indian/Alaska Native race are shown in parentheses.